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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,508	02/18/2004	Jeong-Seok Lee	5000-1-537	2933
33942	7590	11/15/2005	EXAMINER MENZ, DOUGLAS M	
CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			ART UNIT 2891	PAPER NUMBER

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/781,508

Applicant(s)

LEE ET AL.

Examiner

Douglas M. Menz

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Search History.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Group I, claims 1-9, in the reply filed on 8/29/05 is acknowledged. There are no arguments supporting the traversal and as such, this is not found persuasive.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) in view of Kinoshita (US 6330265).

Regarding claim 1, APA discloses a gain-clamped semiconductor optical amplifier having a horizontal lasing structure, the gain-clamped semiconductor optical amplifier comprising:

- a gain layer (105) for amplifying an optical signal (Prior Art Fig. 1);
- a Bragg lattice layer (104, Prior Art Fig. 1);
- a passive light waveguide layer (102, Prior Art Fig. 1);
- an electrode (110, 111) for supplying current to the gain layer (Prior Art Fig. 1);

and

- a current-blocking layer (106) for preventing current from flowing to an area other than the gain layer (Prior Art Fig. 1).

APA does not disclose wherein the Bragg lattice layer is formed on both sides of the gain layer along a longitudinal direction of the gain layer, said Bragg layer enabling light having a corresponding wavelength to resonate in a direction vertical to a longitudinal direction of the gain layer.

Kinoshita discloses an optical functional element which incorporates a Bragg layer (204, Figs. 16-18) on both sides of the gain layer (203, Figs. 16-17 and 206, Fig. 18) said Bragg layer enabling light having a corresponding wavelength to resonate in a direction vertical to a longitudinal direction of the gain layer (Cols. 2 and 20).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Kinoshita's resonator structure that is transverse to the direction of the operational waveguide into APA's conventional optical amplifier for the purpose of increasing efficiency and reducing structure size as taught by Kinoshita (Col. 4).

Regarding claims 2-3, Kinoshita further discloses wherein the passive light waveguide layer (201, Figs. 16-18) is formed above and below the Bragg lattice layer (204, Figs. 16-18).

Regarding claim 4, Kinoshita further discloses comprising a phase conversion area (205, Figs. 17-18) formed at one side of the Bragg lattice layer (204, Figs. 17-18 and Col. 21).

Regarding claim 5, Kinoshita further discloses wherein the phase conversion area (205) is adjusted by omitting a predetermined portion of the Bragg lattices (204) from the Bragg layer (Figs. 17-18, since 205 abuts 204).

Regarding claims 6-7, it is inherent in Kinoshita's structure that there is a phase conversion electrode for supplying current to the phase conversion area mentioned above.

Regarding claim 8, Kinoshita further discloses wherein the gain-clamped semiconductor optical amplifier includes a ridge type gain-clamped semiconductor optical amplifier (Figs. 16-18).

Regarding claim 9, Kinoshita further discloses wherein the gain-clamped semiconductor optical amplifier has a buried hetero-structure (Col. 20).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas M. Menz whose telephone number is 571-272-1877. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Day May 11/13/05